

What is claimed is:

1. A ratchet wrench comprising:

a handle comprising a head;

a drive-stud element comprising a drive stud at a first end and a drive recess at a second end;

a one-way drive transmitting wheel coupled to the drive-stud element to rotate in unison therewith, the one-way drive transmitting wheel and drive-stud element rotatably mounted in the head to rotate about an axis, wherein the one-way drive transmitting wheel coupled to the drive-stud element form a wheel/drive-stud element combination; and

a ratchet mechanism coupled between the one-way drive transmitting wheel and the handle;

wherein the wheel/drive-stud element combination comprises a first face opposite the drive stud, the first face comprising a load-bearing surface extending at least partly around the axis, the one-way drive transmitting wheel extending farther than the load-bearing surface from the axis; and

wherein the head comprises a non-rotating centering element engaging the load bearing surface and positioned to resist movement of the one-way drive transmitting wheel in at least one direction away from the axis, the centering element shaped to expose the drive recess for connection to an axially-aligned driving tool.

2. The invention of Claim 1, wherein the centering element extends around the axis over more than 180°.

3. The invention of Claim 1, wherein the centering element extends continuously around the axis.

4. The invention of Claim 1, wherein the centering element comprises a raised annulus.

5. The invention of Claim 1, wherein at least part of the load-bearing surface faces radially outwardly with respect to the axis.
6. The invention of Claim 1, wherein at least part of the load-bearing surface faces radially inwardly with respect to the axis.
7. The invention of Claim 1, wherein the load-bearing surface is formed only on the one-way drive transmitting wheel.
8. The invention of Claim 1, wherein the load-bearing surface is formed only on the drive-stud element.
9. The invention of Claim 1, wherein part of the load-bearing surface is formed on the one-way drive transmitting wheel and another part the load-bearing surface is formed on the drive-stud element.
10. The invention of Claim 1, wherein the one-way drive transmitting wheel comprises a toothed ratchet wheel, and wherein the ratchet mechanism comprises a pawl that engages the toothed ratchet wheel.
11. The invention of Claim 1, wherein the one-way drive transmitting wheel is non-toothed.
12. The invention of Claim 1, wherein the drive-stud element and the one-way drive transmitting wheel are separately formed as respective parts that are secured together.
13. The invention of Claim 12, wherein the drive-stud element and the one-way drive transmitting wheel differ in at least one of composition, hardness, ductility, finish, malleability, and method of forming.

14. The invention of Claim 1, wherein the drive-stud element and the one-way drive transmitting wheel are formed together as a single component.

15. The invention of Claim 1 further comprising a quick-release mechanism carried by the drive-stud element.

16. A ratchet wrench comprising:

a handle comprising a head;

a drive-stud element comprising a drive stud at a first end and a drive recess at a second end;

a one-way drive transmitting wheel separately formed from and connected to the drive-stud element to rotate in unison therewith, the one-way drive transmitting wheel and drive-stud element rotatably mounted in the head to rotate about an axis; and

a ratchet mechanism coupled between the one-way drive transmitting wheel and the handle.

17. The invention of Claim 16, wherein the one-way drive transmitting wheel differs from the drive-stud element in at least one of composition, hardness, ductility, finish, malleability, and method of forming.

18. The invention of Claim 16, wherein the head comprises a non-rotating centering element engaging at least one of the drive-stud element and the one-way drive transmitting wheel, the centering element positioned to resist movement of the one-way drive transmitting wheel in at least one direction away from the axis, the centering element shaped to expose the drive recess for connection to an axially aligned driving tool.

19. The invention of Claim 16, wherein the one-way drive transmitting wheel comprises a toothed ratchet wheel.

20. The invention of Claim 16, wherein the one-way drive transmitting wheel is non-toothed.
21. The invention of Claim 16 further comprising a quick-release mechanism carried by the drive-stud element.
22. The invention of Claim 16, wherein the drive-stud element contacts the one-way drive transmitting wheel in a contact region that is generally circular.
23. The invention of Claim 16, wherein the drive-stud element contacts the one-way drive transmitting wheel in a contact region that is generally hexagonal.
24. The invention of Claim 16, wherein the drive-stud element contacts the one-way drive transmitting wheel in a contact region that is generally square.
25. The invention of Claim 16, wherein the drive-stud element contacts the one-way drive transmitting wheel in a contact region that is generally ovoid.
26. The invention of Claim 16, wherein the drive-stud element contacts the one-way drive transmitting wheel in a contact region that is generally polygonal.
27. The invention of Claim 16, wherein the drive-stud element contacts the one-way drive transmitting wheel in a contact region that is splined.
28. The invention of Claim 16, wherein the drive-stud element contacts the one-way drive transmitting wheel in a contact region that is non-round.
29. A method for operating a ratchet wrench, the method comprising:
  - (a) providing a first ratchet wrench comprising:
    - a handle;

a one-way drive transmitting wheel mounted to the handle to rotate about an axis;

a drive-stud element comprising a drive stud at a first end and a drive recess at a second end, the drive-stud element coupled to rotate with the one-way drive transmitting wheel; and

a ratchet mechanism coupled between the one-way drive transmitting wheel and the handle;

- (b) providing a second ratchet wrench comprising a drive-stud;
- (c) coupling the drive stud of the second ratchet wrench and the drive recess of the first ratchet wrench;
- (d) coupling the drive stud of the first ratchet wrench to a tool;
- (e) rotating the first ratchet wrench to rotate the tool in a first direction while counter-rotating the second ratchet wrench in a second direction, opposite the first direction; and
- (f) rotating the second ratchet wrench to rotate the tool in the first direction while counter-rotating the first ratchet wrench in the second direction.

30. The method of Claim 29 further comprising:

- (g) de-coupling the drive stud of the second ratchet wrench and the drive recess of the first ratchet wrench.